

## A REVIEW OF THE GENUS PSITTACULA OF BRISSON.

BY ROBERT RIDGWAY.

The number of species of this genus admitted by different writers varies greatly. Excluding the large number of species by him wrongly referred to it, Dr. Otto Finsch, in his "Die Papageien" (1868), recognizes only five, viz, *P. passerina* (LINN.), *P. sclateri* GRAY, *P. cyanopyga* SOUANCE, *P. conspicillata* LAFR., and *P. caelestis* (LESS.). The first of these, however, includes two or more additional species which Dr. Finsch supposed to represent merely immature stages or "transitional plumages" of *P. passerina*. In their *Nomenclator Arium Neotropicalium* (1873), Messrs. Selater and Salvin add to the foregoing one species, which they term "*P. cyanoptera* (BODD.)." In his *Conspectus Psittacorum* (1882), Dr. Ant. Reichenow gives seven, including subspecies, as follows: *P. andicola* FINSCH, *P. cyanoptera* (BODD.), *P. passerina* (LINN.), *P. passerina*, subspecies *cyanopyga* (SOUANCE); *P. passerina*, subspecies *sclateri* (GRAY), *P. caelestis* (LESS.), and *P. conspicillata* LAFR. The first of these is a *Bolborhynchus*, and thus to be dismissed without further notice. In 1883 a new species, *P. crassirostris*, was described by Taczanowski, thus raising the maximum number allowed by any authority to seven.

The difficulty experienced in attempting to discriminate the various forms in this genus arises principally from two causes, viz, (1) absence of sufficient material and (2) the uncertainty as to whether the male differs in plumage in certain stages of its growth. Regarding the first difficulty, I have been able to bring together more than fifty specimens, representing not only the generally recognized species, but also several which, if not new to science, appear not to have hitherto been named. Yet very extensive geographical areas are wholly unrepresented, as, for example, the entire interior of Brazil (except the Lower Amazon), Bolivia, the whole interior of Guiana and Venezuela, eastern Colombia, etc. It is therefore altogether likely that the actual number of existent forms is greater than that given in this paper. Certain it is, from the account of Schomburgk, that there exists in Guiana a species the male of which has a blue rump. It is not at all likely that this can be *P. passerina* (LINN.) which has not yet been recorded from north of the Amazon. It may be the new *P. exquisita*, now known only from Cartagena, in northeastern Colombia; but it is quite as likely to be an undescribed species. No representative of the genus has yet been authentically recorded from any portion of Central America;\* yet it is scarcely likely that the vast region extending from the Isthmus of Panama to southern Mexico, so

\**P. caelestis* (LESS.) has been accredited to Guatemala, but if brought from there the specimen must have been a cage bird.

closely allied to tropical South America in its flora and fauna, can actually be everywhere without a representative of a genus which reappears in western Mexico.

As to the second question, I must confess myself greatly perplexed by conflicting evidence, *i. e.*, the positive statement, on the one hand, of Carl Russ, who has reared *P. passerina* in captivity, and who positively affirms that the young male when first feathered has the rump and part of the wings blue, as in the adult male, and, on the other hand, the existence of specimens among nearly all the species which I have examined which are in various degrees intermediate in plumage between the uniformly green female and the parti-colored adult male; some of these intermediate specimens being like the female except that the secondaries are blue, others having in addition scattered bright blue feathers on the rump and among the under wing-coverts. The only explanation which I am able to offer is that confinement may cause the birds to assume at once a plumage which in the wild state is acquired gradually, or else that the female may occasionally partially assume the plumage of the male. Certain it is that *P. passerina* itself (the species upon which Russ's assertion is based) does exhibit this intermediate or apparently transitional plumage, as is shown further on.

Russ's observations are as follows:

The young [of *P. passerina*] when leaving the nest are only slightly smaller than the old ones; the plumage is more tender and not so dense, but quite fully colored and nearly similar to that of the old ones. The blue on the under side of the wing and on the rump, by which the male is distinguished, appears quite as vivid and deep, but these contour feathers are still rather thin, so that the greenish-white ground-color shows through, which is not the case with the old male; nor does the rich blue appear yet on the upper margin of the wing or upper part of the rump. It is to be remarked that the oldest young ones commenced to pair after five months [*i. e.*, when five months old], but the male had not yet obtained the blue wing-margins. The full and deep blue was attained in the ninth month. (*Jour. für. Orn.*, 1868, p. 213; translation.)

Eleven years later he describes the young birds of the same species as follows:

Young male, green like the adult; blue of the rump and lining of the wing equally vivid and deep, but these covering feathers so thin [*i. e.*, loose-webbed?] that the greenish white of their bases shows through; on the lower back and on the edge of the wing there has not yet appeared any full, rich blue; eye, black; bill and feet like those of the old male, only more bluish. Young female quite similar to the adult, except that the last remiges and their coverts are margined at their tips with blackish; the entire upper surface (perhaps), but particularly the under surface, somewhat stronger and darker green. Transition plumage: The fifth month, the edge of the wing in the young male is not yet blue; but it becomes so after nine months. (*Fremdl. Stubenvögel*, iii, 1879, p. 393; translation.)

Without accepting the alternative theories that (1) birds reared in captivity assume much earlier than those in the wild state the distinctive plumage of the male, (2) that some males do and others do not at once assume this plumage, or (3) that some females partially assume the male plumage, it is very difficult to reconcile Dr. Russ's statements

with facts which are obvious from an examination of a considerable series of specimens, *i. e.*, the existence of apparently transitional plumages intermediate in almost every degree between the entirely green female and the most perfect plumage of the male. Some specimens, for example, differ from the ordinary plumage of the female only in having the secondaries (except tertials), inner primary, and lower greater coverts, blue; others have this blue with the addition of scattered deep blue feathers on the rump, or rump and under wing-coverts together, etc. Such specimens occur in the collection which I have examined, as follows:

*P. passerina* (LINN.).

(1) No. 16566, U. S. National Museum, "Bogota," (probably north-east Brazil) W. Evans: Similar to the full-plumaged male, but blue of rump and under wing-coverts, broken by admixture of several pure green feathers, and lowermost greater coverts merely tinged with blue on concealed (central) portion.

*P. cyanopygia* SOUANCE.

(1) No. 37345, Mazatlan, western Mexico; A. J. Grayson: Similar to the adult female, but secondaries (except tertials), innermost primary coverts, and concealed (central) portion of lowermost greater coverts turquoise-blue, the first margined terminally with light yellowish green; no trace of blue on lower back, rump, under wing-coverts, or inner primaries.

(2) No. 74357, Jalisco, Mexico (cage-bird!), A. Dugès: Similar to the preceding, but lower back and rump (*but not under wing-coverts*) mixed with turquoise-blue feathers, the blue rather exceeding the green in extent.

(3) No. 51436, Mazatlan, February, 1868, F. Bischoff: Like the last, but some of the axillars and a few scattered feathers among the under wing coverts turquoise-blue, and shorter primaries (fourth to tenth, inclusive) becoming blue basally.

*P. conspicillata* LAFR.

(1) No. 30965, Quito, Ecuador; C. R. Buckalew: Similar to the female, but secondaries (except tertials) rich blue, innermost primaries and primary coverts lighter blue, and lowermost greater coverts dull light blue, edged with green; rump tinged with blue, and with one or more deep blue feathers on one side; a very little blue about eyes, but none on lining of wing.

(2) No. 99, Lafresnaye collection: Blue around eye nearly as distinct as in adult; only a few blue feathers on rump; blue on wing far less rich and more restricted, the greater coverts and edge of wing green; under wing-coverts entirely green; head duller green and lower parts decidedly more yellowish green than in adult.

*P. cælestis* (LESS.).

(1) No. 96, Lafresnaye collection; Guayaquil?: Similar to the female, but rump and postocular region strongly tinged with blue. (Observe that in this the blue appears on the rump before it does on the wings—the reverse being the case in *P. passerina*, *P. cyanopygia*, and *P. conspicillata*.)

(2) No. 32905, Guayaquil: Similar to the full-plumaged male, but dark blue of the rump, greater wing-coverts, and under wing-coverts much duller and without the rich gloss, the feathers having apparently a softer or more tender texture; those of the rump are indistinctly tipped with light grayish blue, and the greater wing-coverts have very narrow green tips.

It is not easy to determine, in a series of specimens, which of them have been killed in the wild state and which were skinned after having died in captivity, which, of course, adds to the perplexities of the subject.

This question, however, is one which does not particularly affect the question of distinguishing between the different species and races, which, so far as they are known to me, may very readily be distinguished by the following characters:

## KEY TO THE SPECIES.

*a*<sup>1</sup>. Wings with more or less of blue.

*b*<sup>1</sup>. Width of upper mandible at base .35 or more, depth of closed bill about .55, and wing not more than 3. (Secondaries, shorter primaries and primary-coverts, and lowermost greater wing-coverts, dull ultramarine blue; under wing-coverts and rump green, sometimes tinged or mixed with blue—possibly uniform blue in full plumage.) *Hab.*—Eastern Peru and Ecuador ..... *P. crassirostris* TACZ., ♂.

*b*<sup>2</sup>. Width of upper mandible at base less than .35 and depth of closed bill less than .55, or else wing 3.45 or more.

*c*<sup>1</sup>. Upper mandible blackish or dusky. (Above dark parrot-green, beneath lighter green; rump, under wing-coverts, etc., rich smalt-blue.) *Hab.*—Upper Amazons ..... *P. sclateri* GRAY, ♂.

*c*<sup>2</sup>. Upper mandible light-colored, like the lower (sometimes dusky at base).

*d*<sup>1</sup>. Rump bright blue.

*e*<sup>1</sup>. Sides of head marked with blue.

*f*<sup>1</sup>. Forehead and sides of head (except orbital region) grass-green; orbital region cobalt-blue; lower parts dull malachite-green; mantle dull parrot-green. *Hab.*—Colombia and Eastern Ecuador.

*P. conspicillata* LAFR., ♂

*f*<sup>2</sup>. Forehead and sides of head (except postocular region) bright yellowish green or apple-green; postocular region light azure-blue; lower parts light pea-green, tinged laterally with brownish; mantle dull brownish-green or olive.

*g*<sup>1</sup>. Mantle dull grayish olive-green; rump, under wing-coverts, etc., dark hyacinth-blue; upper tail-coverts deep grass-green. *Hab.*—Western Peru and Ecuador ..... *P. cælestis* (LESS.), ♂.

*g*<sup>2</sup>. Mantle light dull olive or greenish brown, in very conspicuous contrast with green of upper tail-coverts, head, etc.; upper tail-covert light grass-green, margined with bright malachite-green. *Hab.*—“Colombia” ..... *P. cælestis lucida* RIDGW.

*e*<sup>2</sup>. Sides of head without blue.

*f*<sup>1</sup>. All the under wing-coverts and axillars uniform blue; shorter primaries blue.

*g*<sup>1</sup>. Above deep grass-green, beneath bright Paris-green; rump, under wing-coverts, etc., rich smalt-blue. *Hab.*—Eastern Brazil south of Cape St. Roque.....*P. passerina virida* RIDGW., ♂.

*g*<sup>2</sup>. Above light parrot-green, beneath apple-green; rump, under wing-coverts, etc., not darker than cobalt-blue.

*h*<sup>1</sup>. Rump, under wing-coverts, etc., cobalt-blue; wing 3.25–3.35. *Hab.*—Eastern Brazil, between Cape St. Roque and mouth of Amazon.

*P. passerina* (LINN.), ♂.

*h*<sup>2</sup>. Rump, under wing-coverts, etc., light turquoise-blue; wing 3.45–3.60. *Hab.*—Western Mexico.....*P. cyanopygia* SOUANCE, ♂.

*f*<sup>2</sup>. Exterior under wing-coverts light greenish blue, the central ones dark hyacinth-blue; axillars light greenish-blue, or bluish-green, tipped with dark hyacinth-blue; all the primaries green. (Rump and greater wing-coverts light turquoise-blue.) *Hab.*—Northeastern Colombia (vicinity of Cartagena).....*P. exquisita* RIDGW., ♂.

*d*<sup>2</sup>. Rump bright green.

*e*<sup>1</sup>. Exterior under wing-coverts (broadly) and axillars emerald-green or light bluish green, some of the latter tipped with hyacinth-blue: central under wing-coverts dark hyacinth-blue; rump vivid Paris-green. *Hab.*—Guiana and Venezuela..*P. guianensis* (SWAINS.), ♂.

*e*<sup>2</sup>. All the under wing-coverts, except those along the edge of wing (forming very narrow exterior margin) and axillars dark hyacinth-blue; rump vivid emerald-green, tinged with light blue anteriorly. *Hab.*—Lower Amazons (Santarem, Diamantina, etc.)

*P. deliciosa* RIDGW., ♂.

*a*<sup>2</sup>. Wings without any blue.

*b*<sup>1</sup>. Width of upper mandible at base .35 or more; depth of closed bill about .55, and wing not more than 3. *Hab.*—Upper Amazons.

*P. crassirostris* TACZAN., ♀.

*b*<sup>2</sup>. Width of upper mandible at base less than .35, and depth of closed bill less than .55, or else wing decidedly more than 3.

*e*<sup>1</sup>. Upper parts (except forehead and rump) dull grayish green. *Hab.*—Western Ecuador and Peru.....*P. caelestis* (LESS.), ♀.

*e*<sup>2</sup>. Upper parts bright green, more vivid on rump (forehead sometimes yellow).

*d*<sup>1</sup>. Forehead green, like cheeks.

*e*<sup>1</sup>. Anterior portion of head (cheeks as well as forehead) decidedly more yellowish green than occiput and hind-neck.

*f*<sup>1</sup>. Lighter colored, with lower parts more yellowish green. *Hab.*—Eastern Brazil, between Cape St. Roque and mouth of Amazon.

*P. passerina* (LINN.), ♀.

*f*<sup>2</sup>. Darker, with lower parts purer green. *Hab.*—Eastern Brazil south of Cape St. Roque.....*P. passerina virida* RIDGW., ♀.

*e*<sup>2</sup>. Anterior portion of head not decidedly more yellowish green than occiput and hind-neck (though sometimes distinctly lighter).

*f*<sup>1</sup>. Under wing-coverts light bluish green; inner webs of secondaries without distinct yellow edges; feet light-colored (pale flesh-colored or whitish in life?). *Hab.*—Colombia and eastern Ecuador.

*P. conspicillata* LAFR., ♀.

*f*<sup>2</sup>. Under wing-coverts apple-green or light parrot-green; inner webs of secondaries with narrow yellow edges; feet horn-colored or dusky.

*g*<sup>1</sup>. Light parrot-green above, apple-green beneath; culmen .46–.48; width of upper mandible at base .35–.38. *Hab.*—Western Mexico (Mazatlan to Manzanillo Bay).....*P. cyanopygia* SOUANCE, ♀.



- g*<sup>2</sup>. Deep parrot-green or grass-green above, light parrot-green beneath; culmen, .53-.55; width of upper mandible at base .40. *Hab.*—Tres Marias Island, western Mexico..... *P. insularis* RIDGW., ♀.\*
- d*<sup>2</sup>. Forehead yellow, or greenish yellow, the cheeks light green.
- e*<sup>1</sup>. Greater wing-coverts very indistinctly edged with lighter green; yellow of forehead more restricted, and lower parts less yellowish green.
- f*<sup>1</sup>. Yellow of forehead more restricted. *Hab.*—(Guiana and Venezuela.—*P. guianensis* (SWAINS.), ♀.
- f*<sup>2</sup>. Yellow of forehead less restricted (usually covering nearly entire forehead). *Hab.*—Lower Amazons..... *P. deliciosa* RIDGW., ♀.
- e*<sup>2</sup>. Greater wing-coverts distinctly edged with apple-green; yellow of forehead covering entire forehead and lores and tinging crown; lower parts more yellowish-green. *Hab.*—Northeastern Colombia (Cartagena)..... *P. exquisita* RIDGW., ♀.

### 1. *Psittacula crassirostris* TACZANOWSKI.

(Thick-billed Passerine Parrot.)

*Psittacula crassirostris* TACZAN., P. Z. S. 1883, 72 (Yurimaguas, Eastern Peru); Orn. du Pérou, iii, 1886, 215 (do.).

*Habitat.*—Eastern Peru (Yurimaguas) and Ecuador (Rio Napo).

SP. CHAR.—“Similar to *P. cyanoptera* [*i. e. P. guianensis*?], but smaller, with more robust bill; color above darker, the primaries and secondaries more blue, and the under wing-coverts green. Total length 77, tail 40, bill 13, and tarsi 12 millimeters.”

“Green, beneath paler, the rump brighter, anterior portion of secondaries, outer webs of adjacent primaries, and primary coverts ultramarine-blue; under wing-coverts green. Bill thick, whitish; feet gray; iris gray.

“♂. Upper parts of the body green, similar to that of *P. passerina*, with the lower back and rump of a clearer and purer green, nearly like that of the fore part of the face; the green on the lower parts of the body paler and tending to yellowish; the secondaries to the seventh, outer web of neighboring primaries from the sixth, and the great primary coverts of an ultramarine-blue, similar to that of the species mentioned; the blue of the secondaries is bordered at the extremity with yellowish green; the under wing-coverts green, except the greater [*i. e.* under primary coverts] which are bluish gray; under side of the remiges gray, washed with bluish olive. Tail, green. Bill robust, whitish; feet grayish flesh-color; iris clear gray.

“Length of wing 77, tail 40, bill 13, tarsus 12, middle toe 14 millimeters.

“Yurimaguas (Stolzmann).

“Form nearest related to *P. cyanoptera* from Colombia [*P. guianensis*?], and only differing from it by the bill being much more robust and the blue being more extensive on the wing, of a more uniform, pure, and more intense color. This bird differs from *P. passerina* by the absence of blue on the rump, on the under wing-coverts, and on the bend of the wing.” (TACZAN., *Orn. du Pérou*, p. 73; translation.)

\* The male of this species is unknown to me.

A specimen of what is probably this species is in the collection of the American Museum of Natural History in New York City (Lawrence collection). It bears two labels, on one of which is written in Mr. Lawrence's handwriting, "*Psittacula conspicillata*, ♀, Napo, Moore," and on the other the same identification, with references, in the handwriting of Dr. Finsch, who refers to the same specimen under *P. conspicillata* on page 665 of his monograph. It is, however, unquestionably distinct from *P. conspicillata*, and though it shows decided traces of blue both on the rump and under wing-coverts, it agrees otherwise closely with the characters of *P. crassirostris*, as given above. I am therefore inclined to believe that the latter species has a plumage corresponding to that of *P. conspicillata*, *P. passerina*, and allied species, in which the rump and under wing-coverts are entirely rich blue.

This Rio Napo specimen may be described as follows:

Above bright grass-green, or deep parrot-green, the color of the rump lighter and purer (more emerald-green) and mixed with blue feathers having green tips; secondaries (except tertials) shorter primaries, primary-coverts (except outermost), and alula (except outer feather), dull ultramarine-blue, the outer webs of secondaries margined terminally with light yellowish-green, and primaries margined at tips with dusky; lower greater wing-coverts dull ultramarine-blue, tipped and edged with green; sides of head and neck similar in color to upper parts, but becoming more vivid or emerald-green on forehead, lores, and orbits; lower parts bright yellowish Paris-green; under wing-coverts dull cobalt, the feathers tipped with light green; axillars dull, light green. Bill pale brown, becoming whitish at tip; feet pale brownish. Length (skin) 4.50; wing 3, tail 1.50, culmen .50, width of upper mandible at base .38, depth of closed bill .55, tarsus .40, middle toe .50.

This specimen resembles very closely in coloration an example of *P. conspicillata*, supposed to be a young male (No. 30965, Quito, Ecuador), but is darker and decidedly brighter green, both above and below, and lacks any trace of blue about the orbits. The blue of the rump and wings is almost exactly the same, being slightly more developed in the present bird, which may at once be distinguished, however, by its very large head and much more robust bill, the lower mandible of which is more than half covered on the sides by the antrorse malar feathers.

## 2. *Psittacula sclateri* GRAY.

(Sclater's Passerine Parrot.)

*Psittacula sclateri* GRAY, List Psitt., 1859, 86 (Rio Javarri, Upper Amazons).—FINSCH, Mon. Papag., ii, 1868, 630 (Ypanema, Maribitanas, and Cochoeira das Pederneras, nw. Brazil; Quito; Sarayacu and Ucayali, e. Peru).—TACZAN., Orn. Per., iii, 1886, 213 (Sarayacu and Rio Javarri, e. Peru).

*Psittacus sclateri* SCHLEG., Mus. P. B. *Psittaci*, 1864, 32 (Quito; Maribitana, nw. Brazil).

*Psittacula passerina*, subspecies, *sclateri* REICHENOW, Consp. Psitt., 1882, 190.

SP. CHAR.—Most nearly resembling the dark southern form or representative of *P. passerina*, but still darker, the male with terminal por-

tion of auricular region tinged with dark blue and the upper mandible dark brown or dusky.

*Habitat*.—Upper Amazons (Rio Javarri).

*Adult male* (Coll. Am. Mus. N. H., New York City; Rio Javarri): Above uniform dark parrot-green (much darker than in any other species of the genus), the entire lower back and rump, lowermost greater wing-coverts, secondaries (except tertials), innermost primaries, and primary-coverts, rich smalt-blue; front portion of head and lower parts lighter and brighter green than upper parts, except laterally (from sides of neck to flanks), where somewhat tinged with olive; under tail-coverts and anal region much lighter, inclining to apple-green; an indistinct bar or transverse spot of dark blue across terminal portion of auricular region; under wing-coverts and axillars uniform rich smalt-blue; under primary-coverts and under surface of remiges terre-verte green, tinged blue, none of the feathers with yellowish edgings. Upper mandible dusky brownish, lower mandible dull whitish; feet (in dried skin) pale brownish. Length (mounted specimen) about 4.75, wing 3.30, tail 1.90, culmen .42, gonys .30, width of upper mandible at base .32, tarsus .40, inner toe .52.

*Adult female*: "Dark grass-green, bright yellowish green on the rump; sinciput, cheeks, chin, and throat yellowish green, the remaining under parts, with lower wing-coverts, brighter green than upper parts; quills dead black on the under side and on the inner web; under side of tail apple green; maxilla dark horny brown; mandible horny white; feet dark horny brown; claws black." (FINSCH; translation of description of a specimen from Quito in the Leyden Museum.)

### 3, *Psittacula conspicillata* LAFR.

(Spectacled Passerine Parrot.)

*Psittacula conspicillata* LAFR., Rev. Zool., xi, 1848, 172 ("Colombia or Mexico?").—GRAY, List Psitt. Brit. Mus., 1859, 86 ("Nicaragua").—SCL., Catal., 1862, 357 (Bogota).—FINSCH, Mon. Papag., ii, 1868, 663 (Bogota; Rio Napo).—REICHENOW, Consp. Psitt. 1882, 190 (Colombia).

*Psittaculus conspicillatus* SCHLEG. Mus. P. B. *Psittaci*, 1864, 32 (Bogota).

*Habitat*.—Highlands of Colombia and eastern Ecuador.

SP. CHAR.—*Adult male*. Above dull green, becoming bright grass-green or parrot-green on forehead and crown; orbital region cobalt-blue; lower back, rump, secondaries, shorter primaries, primary-coverts, greater coverts, under wing-coverts, and axillars, rich ultramarine-blue, darker, and inclining to smalt-blue on rump, primary-coverts and basal portion of remiges; cheeks bright green like forehead, lower parts dull malachite or chromium-green. Length (skins) about 4; wing 3.05–3.25, tail 1.60–1.75, culmen .45–.50.

*Young male?* (No. 30965, Quito, Ecuador; C. R. Buckalew). Above dull grass-green (rather brighter than in adult), becoming brighter green on forehead, and lighter and much clearer green (inclining to



emerald) on rump, where mixed with blue feathers having green tips, and one feather entirely ultramarine-blue; secondaries (except tertials) intense ultramarine-blue, more cobalt terminally, where edged narrowly with light yellowish green; inner primary-coverts, inner feathers of lula, and outer webs of shorter primaries, lighter blue than secondaries; lowermost greater coverts cobalt-blue, margined with light green; orbits tinged with blue, lower parts apple-green, the under wing-coverts and axillars pale bluish green. Length (skin) 4, wing 3.25, tail 1.50, culmen .45.

*Adult female* (No. 32966, Bogota): Similar to the supposed young male described above, but without any trace of blue on rump or wings. Length (skin) 4.50, wing 3.40, tail 1.90, culmen .48.

Seven specimens examined: Four adult males from Bogota (including two "types" in the Lafresnaye collection), two supposed young males, and the adult female described above. The second supposed young male is one of the Lafresnaye "types," and resembles that described above, except that there is more blue about the eye, and more blue feathers on the rump, while the green, both on upper and lower parts, is much more like that of the adult.

#### 4. *Psittacula cœlestis* (LESSON).

(Guayaquil Passerine Parrot.)

*Agapornis caelestis* LESS., Écho du Monde Savant, 1844, pl. 2; Descr. Mam. et Ois., 1847, 198.

*Psittacula caelestis* BONAP., Rev. Zool., vi, 1854, 152.—SCL., Catal., 1862, 357 (Babahoyo and Guayaquil, w. Ecuador).—FINSCH, Mon. Papag., ii, 1868, 666 (Guayaquil, "Chili," "Peru;" "Colombia;" "s. Guatemala").—REICHENOW, Consp. Psitt., 1882, 190 (Ecuador).—TACZAN. Orn. du Pérou, iii, 1886, 214 (Chepen, Tumbes, Callacate, and Chota, w. Peru).

*Psittaculus caelestis* SCHLEG., Mus. P.-B., *Psittaci*, 1864, 32 (Guayaquil; "Chili").

*Habitat*.—Western Peru and Ecuador; western Colombia(?) north-western Chili.

SP. CHAR.—*Adult male*: Top and sides of head (except postocular region) bright apple-green or yellowish Paris-green; occiput and hind-neck dull grayish green, sometimes tinged with bluish, and passing into cobalt-blue behind the eye (immediately above auriculars); back, scapulars, wing-coverts (except anterior lesser-coverts) and tertials dull brownish pea-green; lower back, rump, secondaries, under wing-coverts, and axillars, rich dark hyacinth-blue; outer webs of shorter primaries, inner primary coverts, and greater coverts rather lighter, more ultramarine-blue; longer primaries, bright parrot-green; upper tail-coverts and tail bright grass-green, inclining to emerald-green in certain lights; lower parts pea-green, tinged with light brownish laterally, the flanks, under tail-coverts, etc., purer light green. Length (skins), about 5; wing 3.30–3.45, tail 1.80–1.90, culmen .48–.50.

*Adult female* (Pascamayo, Peru; Lawrence collection): No trace of blue anywhere; upper parts rather brighter green than in males; the

lower back and rump bright parrot-green, inclining to emerald; top and sides of head less pure yellowish green than in the male; postocular region tinged with bluish green, lower parts entirely apple-green; under wing-coverts and axillars similar but less yellowish. Wing 3.20, tail, 2; culmen .48.

*Young male?* (No. 96, Lafresnaye collection; Guayaquil?): Similar to adult female, but postocular region decidedly tinged with blue, and rump bluish green strongly tinged with ultramarine-blue. Wing 3.20, tail 1.80, culmen .50.

The above description of the adult male is from two examples in the Lawrence collection from Pascamayo, Pern. One in the National Museum collection from Guayaquil (No. 32905) is similar, except that the blue of the rump and under wing-coverts is duller and less glossy. Its measurements are as follows: Wing 3.30, tail 1.85, culmen .50.

A very handsome adult male in the Lafresnaye collection (No. 95), said to be from Colombia, is very different from Guayaquil and Pascamayo specimens. The top and sides of the head are decidedly more yellowish green; the lower parts also are lighter and more yellowish green, with the sides and flanks strongly olive-buff; the mantle is conspicuously browner, or light brownish olive-green, and the blue of the rump, etc., is lighter, being of a rich smalt-blue hue. In short, the different colors are far more conspicuously contrasted, and the bird much handsomer. Wing 3.30, tail 1.80, culmen .51. The differences are sufficiently great to characterize a very strongly marked geographical race or subspecies, which may be called *P. caelestis lucida*.\*

##### 5. *Psittacula passerina* (LINN.).

(Ceara Passerine Parrot.)

*Psittacus passerinus* LINN., S. N. ed. 10, i., 1758, 103 (based on *P. brachyurus*, etc., Mus. Adolphi Friderici, i, 1754, 14); ed. 12, i, 1766, 159 (quotes, in addition, *Psittacus brasiliensis* BRISS. Av., iv, p. 384, EDW., Av., v, p. 51, pl. 235, etc.); WAGL., Mon. Psitt., 1832, 617.

*Psittacula passerina* FINSCH, Mon. Papag., ii, 1868, 648-660 (part).—REICHENOW, Consp. Psitt., 1882, 189.—TACZAN., Orn. Per. iii, 1886, 212 description, but perhaps not spec'u; Rio Javari).

*Psittaculus passerinus* SCHLEG., Mus. P.-B., *Psittaci*, 1864, 30 (part).

*Agapornis cyanopterus* SWAINS., Anim. in Menag., 1838, 320 (nec *Psittacus cyanopterus* BODD.).

*Habitat*.—Ceara district of eastern Brazil, between Cape St. Roque and mouth of the Amazon.

SP. CHAR.—*Adult male*: Above light parrot-green, becoming more yellowish green on forehead, where, as also sometimes all round base of the bill, yellowish apple-green; sides of head and entire lower parts apple-green; lower back, rump, secondaries (except tertials), shorter primaries, primary coverts, alula, greater coverts, under wing-coverts,

\* The original *P. caelestis* is said to have come from Guayaquil.

and axillars, uniform rich cobalt-blue. Length (skins) about 4.50-5; wing 3.20-3.35, tail 1.65-1.90, culmen .45-.48.

*Adult female*: Without any blue whatever; above light parrot-green, brighter, more emerald-green on rump; beneath apple-green, the fore part of the head, all round (cheeks as well as forehead), sometimes decidedly more yellowish than lower parts. Length (skins) about 5, wing 3.25-3.35, tail 1.75-1.90, culmen .45-.48.

*Young male*: Similar to adult female, but with secondaries, shorter primaries, and inner primary-coverts blue, the rump and under wing-coverts also sometimes interspersed with bright blue feathers.

Specimens examined are from Ceara and Para.

#### 6. *Psittacula passerina vivida*, subsp. nov.

(Bahia Passerine Parrot.)

?? *Psittaculus gregarius* SPIX, Av. Bras., i, 1838, 39, pl. 34, figs. 3, 4 (Minas Gaeres, Brazil; = ♀?).

? *Psittaculus passerinus* SPIX, Av. Bras., i, 1838, 38, pl. 33, fig. 1 (Rio San Francisco, Brazil).

? *Psittacula passerina* AUCT., part.

*Habitat*.—Bahia district of eastern Brazil.

SP. CHAR.—Similar to *P. passerina*, but darker or purer green both above and below; adult male with blue of rump, etc., rich ultramarine, instead of cobalt, and hind-neck often tinged with blue.

*Adult male* (type, No. 46723, Bahia; Mr. Middleton): Above deep parrot-green, or grass-green, duller and slightly tinged with bluish on nape; top and sides of head vivid grass-green, inclining to emerald on auriculars and becoming slightly more yellowish around base of bill; lower parts emerald-green medially, more brownish green laterally; lower back, rump, secondaries (except tertials), shorter primaries, primary coverts, alula, greater coverts, under wing-coverts, and axillars, rich ultramarine-blue. Length (mounted specimen) about 4.25; wing 3.25, tail 1.70, culmen .48.

*Adult female*: Similar to the male, but without any blue; length (skin) about 4.50-5, wing 3.05-3.35, tail, 1.60-1.75, culmen .45-.48.

The blue of the greater wing-coverts is lighter than that of the secondaries, the difference being sometimes very marked.

Three adult males from Bahia (two in the Lawrence collection and one in the collection of the Museum of Comparative Zoology, Cambridge, Mass.) agree very closely in coloration with the one described above. Length (skins) 4.50-5, wing 3.20-3.25, tail 1.60-1.70, culmen .42-.48. One from Maceio Bay (No. 7252, Mus. Comp. Zool.) is similar in coloration, and measures as follows: Length (skin) 4.60, wing 3.30, tail 1.70, culmen .50. The bill is decidedly larger than in Bahia specimens, as it is also in a female from the same locality, but I am unable to appreciate any other differences.

7. *Psittacula cyanopygia* SOUANCE.

(Mexican Passerine Parrot.)

*Psittacula cyanopygia* SOUANCE, Rev. et Mag., viii, 1856, 157 (hab. ignot.).*Psittacula cyanopygia* FINSCH., Mon. Papag., ii, 1868, 662 ("Boliva;" "Upper Amazons").—LAWR., Mem. Bost. Soc., ii, pt. iii, No. 3, 1874, 297 (Mazatlan; Manzanillo Bay).*Psittacula cyanopygius* SCHLEG., Mus. P. B., Psittaci, 1864, 33 ("Bolivia").*Psittacula passerina*, subspecies *cyanopygia* REICHENOW, Consp. Psitt., 1882, 190.*Habitat*.—Western Mexico, from Manzanillo Bay to Mazatlan.SP. CHAR.—Similar to *P. passerina* (LINN.), but larger and blue of the rump, etc., light turquoise, instead of cobalt.*Adult male* (No. 51435, Mazatlan, Mexico, January, 1868; F. Bischoff): Above uniform light parrot-green; beneath similar, but much paler, inclining to apple-green; lower back and rump, greater wing-coverts, under wing-coverts, and axillars very bright light turquoise-blue; secondaries (except tertials), shorter primaries (except toward tips), and primary-coverts (except three outer feathers), deeper blue, inclining to cerulean blue; under surface of remiges and under primary coverts, dull glaucous-green, more yellowish along edges; bill pale dull yellowish; the basal half grayish horn-color (wholly dull whitish in life); legs and feet dusky (whitish or flesh-colored in life?). Length (before skinning) 4.50; stretch of wings 11, wing 3.60, tail 1.75, culmen .50, depth of bill at base .55, tarsus .48, inner toe .55.*Young male transition plumage* (No. 51436, same locality and collector, February, 1868): Similar to the adult male, but blue of rump mixed with bright green feathers, and not extended over lower back, greater wing-coverts green (with bluish along the median line), and the under wing-coverts and axillars mixed green and turquoise-blue. Length (before skinning) 5; extent 11, wing 3.45, tail 1.80, culmen .50, tarsus .47, inner toe .55.*Young male, (first plumage?)* (No. 37345, Mazatlan, Mexico; Col. A. J. Grayson): Lower back and rump entirely bright green (inclining to Paris-green); under wing-coverts and axillars similar but lighter; wing exteriorly as in the preceding. Length (skin) 5.40, wing 3.50, tail 1.80, culmen .50, tarsus .47, middle toe .57.*Adult female* (No. 37346, Mazatlan, Mexico; Col. A. J. Grayson): Above entirely light parrot-green, the rump, upper tail-coverts, and tail brighter, inclining to Paris-green; remiges (except tertials) darker green than coverts; fore part of head and lower parts, including under wing-coverts and axillars, light apple-green; no blue whatever. Length (skin) 5.60, wing 3.50, tail 1.80, culmen .47, tarsus .47, inner toe .53.

"The typical specimen described by Souancé from the Mexican collection, was without locality. Another in the Leyden Museum is labeled 'River Amazon,' but without the name of the collector, while the third specimen known to me in the British Museum is said to have been ob-



tained from Bolivia through Bridges. The latter locality has heretofore been regarded as correct, but is very doubtful on account of the authentic specimens now before me."—(FINSCH; translation.)

8. *Psittacula insularis*, sp. nov.

(Tres Marias Passerine Parrot.)

*Psittacula cyanopygia* FINSCH, Abh. Nat. Brem., 1870, 353 (Tres Marias.)—LAWR., Pr. Bost. Soc. N. H., 1871, 270 (do.).

SP. CHAR.—Similar to *P. cyanopygia*, but larger and darker.

*Habitat*.—Tres Marias Islands, western Mexico.

*Adult male*: "The old male corresponds exactly with the description given by me (*l. c.*)" Cf. Mon. Papag.

*Young male, transition plumage*: "Shows on the rump and under wing-coverts only a few turquoise-blue feathers; primary coverts and secondaries are blue with green outer margins; the greater coverts still green, like the rest of the upper side of the wing; bill horn-white, with brownish gray base."—(FINSCH; translation.)

*Adult female* (type, No. 37347, Tres Marias, January, 1865; Col. A. J. Grayson): Above clear parrot-green, much brighter or inclining to Paris-green on rump, upper tail-coverts, and tail; lower parts deep apple-green. Length (skin) 5.75, wing 3.50, tail 2, culmen .55, depth of bill at base .58, tarsus .52, inner toe .58.

Another adult female (No. 39973, same locality and collector) is similar in coloration, and measures as follows: Length (skin) 5.60, wing 3.50, tail 1.80, culmen .55, depth of bill at base .58, tarsus .48, inner toe .55.

I have not been able to examine adult males of this insular form, and have therefore been obliged to translate what Dr. Finsch says concerning that sex. It may be remarked, however, that the specimen described by him in his monograph, with the description of which he says the adult male of the Tres Marias bird agrees, is of unknown locality.

That Colonel Grayson was aware of the difference between this form and that of the main-land, is shown by the following quotation from his "Natural History of the Tres Marias and Socorro" (p. 271):

"There is a closely allied species on the main-land from which the Tres Marias variety differs in its larger size, especially of the bill, and in its deeper green color; the bill, also, is darker at the base, that of the main being entirely white.\* The general appearance of the plumage is lively green, rump in the male violet blue."†

Mr. Lawrence, however, did not consider the differences sufficient to

\*This distinction becomes lost in dried skins.—R. R.

†This last statement may have been written from memory, since FINSCH describes the Tres Marias adult males (probably obtained from Colonel Grayson) as having the rump turquoise-blue.

warrant the naming of a separate *Tres Marias* form. He says (Proc. Bost. Soc., XIV, 1872, 271):

"There are but two specimens from the *Tres Marias*, both females;\* these differ from those of the main-land, of which there are eight of both sexes before me, in being of a darker green, as pointed out by Colonel Grayson; they are notably darker on the rump and upper tail-coverts; in the others there is a greater prevalence of a yellow shade throughout the plumage; in size and color of the bills they do not differ materially from the two localities;† perhaps the *Marias* bird may be considered a darker local race."

9. *Psittacula exquisita*, sp. nov.

(Cartagena Passerine Parrot.)

*Psittacula cyanoptera* (BODD.) CASS., Pr. Ac. Nat. Sci. Phil., vii, 1860, 137; Cartagena (nec *Psittacus cyanopterus* BODD.).

SP. CHAR.—Similar to *P. guianensis* (SW.), but male with entire lower back and rump fine light turquoise-blue or Nile-blue (paler and greener than in *P. cyanopygia* SOUANCE), upper tail-coverts and tail more yellowish green, front and side of head also more yellowish green, and anterior lower parts decidedly lighter and duller green; the female with the general color of a yellower tone, the forehead much more extensively yellow, and the greater wing-coverts light parrot-green, edged with paler, more yellowish green.

*Habitat*.—Atlantic coast of Colombia (Cartagena).

*Adult male* (No. 70993, Cartagena, Colombia; A. Schott): Above plain light green, or bright apple-green, paler and somewhat tinged with grayish on hind-neck, brightening into vivid yellowish Paris-green on fore part and sides of head; entire lower back and rump and greater wing-coverts exquisite Nile-blue or pale turquoise-blue; upper tail coverts and tail rich light yellowish green, the concealed portion of the feathers inclining decidedly toward yellow; innermost primary-coverts and adjacent sub-basal portion of secondaries dark blue; the remaining portion of secondaries lighter greenish-blue, edged with light yellowish green; outer surface of primaries vivid light green, margined terminally with dusky. Anterior lower parts light apple-green, the posterior portions clearer, more yellowish, green; central portion of lining of wing intense hyacinth-blue, the exterior portion (broadly) light green strongly tinged with Nile-blue; axillars pale emerald-green, tinged with Nile-blue, the longer feathers broadly tipped with deep hyacinth-blue; under primary-coverts bluish green, indis-

\* These are both in the National Museum collection, and are the ones described above.

† This observation, as regards color of the bill, is of course based on dried skins, in which differences which are very obvious in the living or freshly-killed birds are lost. As to size the series examined by me (two adult females from *Tres Marias* and three—besides five males—from the main-land) supports Colonel Grayson's statement-

tinely tipped with dull bluish; under surface of remiges decidedly paler bluish green, the secondaries and approximate primaries edged with pale yellow. Bill wholly whitish. Length (skin) 4.80, wing 3.30, tail 1.85, culmen .50, gonys .33, width of upper mandible at base .35, tarsus .45, inner toe .50.

*Adult female* (in Coll. Am. Mus. Nat. Hist. New York; Cartagena, Colombia; C. Wood): Lower back and rump vivid Paris-green, greater wing-coverts light grass-green, edged with light Paris-green, primary coverts and secondaries deep grass-green, edged with paler; forehead gamboge-yellow, and under wing-coverts, with axillars, entirely light Paris-green. Otherwise much like the male. Length (skin) about 5; wing 3.20, tail 1.95, culmen .45, gonys .30, width of upper mandible at base .32, tarsus .40, inner toe .48.

The female of this exquisite species resembles much more closely that of the Lower Amazonian *P. deliciosa* than that of *P. guianensis*, the differences being very slight, and consisting chiefly in the larger size and deeper, as well as more extensive, yellow of the forehead; with only one specimen, however, I cannot say that these differences are constant.

#### 10. *Psittacula guianensis* (SWAINS.)

(Guiana Passerine Parrot.)

*Psittacula cyanoptera* (BODD.) AUCT. (*nec Psittacus cyanopterus* BODD.\*).—REICHENOW, *Consp. Psitt.*, 1882, 189.

*Agapornis guianensis* SWAINS., *Anim. in Menag.*, 1837, 320 (Demerara).†

? *Psittacula gregaria* SPIX, *CAB. Schomb. Guiana*, iii, 1848, 747 (= ♀?).

*Psittacula viridissima* LAFR., *Rev. Zool.*, 1848, 172 (Caracas). (*Nec Psittacus viridissimus* SWAINS., *Zool. Illustr.*, 155.)

? *Psittacula sancti thome* SCHLEG., *Mus. P.-B. Psittaci*, 1864, 31 (Rio Branco, Portuguese Guiana). (*Nec Psittacus St. Thomæ* KÜHL?)

*Psittacula passerina* (LINN.), FINSCH, *Mon. Papag.*, ii, 1868, 648-660, part (*nec Psittacus passerinus* LINN.).

SP. CHAR.—*Adult male*: Plain green above, the hind neck duller and tinged with grayish, the lower back and rump rich emerald-green, or Paris-green; forehead and sides of head similar to rump, but less vivid; lower parts paler green than upper; greater wing-coverts light

\* *Psittacus cyanopterus* BODD. (Tabl. P. E., 1783, 27), based on the *Petit Peruche, du Cap de Bonne-Esperance*, Pl. Enl., 455, fig. 1, is not, with our present knowledge, determinable. There is no more reason for identifying it with the present species than with any other, especially since there is so much uncertainty regarding the habitat, which was given by BUFFON as the Cape of Good Hope. *P. capensis* MULL. (S. N. Suppl. 1767, 80), and of GMEL. (S. N., i, 1788, 350) has precisely the same basis. *Agapornis guianensis* SWAINS., is unquestionably the present bird, as is also *Psittacula viridissima* LAFR., though the latter may possibly prove to be a local race. (See special remarks upon the type, on p. 544.)

† Swainson's description is as follows: "Green; spurious quills and inner wing-coverts amethystine blue; outer margin of the shoulders light green; greater wing-coverts tinged with bluish. Female entirely green. (*P. capensis*, AUCT., Pl. Enl., 455, fig. 1.) The smallest parrot of Demerara, where it is found in large flocks, size of the last."

glaucous-green, or pale greenish blue; innermost primary-coverts, dark hyacinth-blue; remiges entirely green; under wing-coverts and axillars chiefly light bluish green, the tips of the longer axillars and a patch on posterior portion of lesser-covert region dark hyacinth-blue.

*Adult female*: Above light parrot-green or bice-green, becoming yellow on forehead and bright yellowish green on lower back, rump, and upper tail-coverts; sides of head and lower parts apple-green; no blue whatever on wing.

An adult male from Venezuela (No. 70990) measures as follows: Wing 3.35, tail 1.90, culmen .48, width of upper mandible at base .35; tarsus, 45, outer toe .50.

An adult male from the Essequibo River, Guiana, in the collection of the American Museum of Natural History is similar to the preceding in plumage and measures as follows: Wing 3.25, tail 1.75, culmen .48, width of upper mandible at base .32, tarsus .40, outer toe .50.

The type of *P. viridissima* LAFR. (No. 93, Lafresnaye Collection, Boston Society Natural History), from Caracas, agrees in all essential respects with an adult male from Venezuela in the National Museum collection (No. 70990), except that there is decidedly less yellow in the green, the lower parts being a clear Paris-green, the forehead and sides of head similar but brighter. The upper parts are a darker and purer green (almost grass-green), much duller and grayer on hind-neck, the lower back and rump vivid emerald-green, the upper tail-coverts more yellowish. Wings exactly as in No. 70990, except that the general green color is darker and purer. Length (mounted specimen) 4.80, wing 3.25, tail 1.90, culmen .50.

Two adult females, unquestionably of this species, have been examined, one (belonging to the American Museum of Natural History) from British Guiana, the other, one of the types of *P. viridissima* LAFR., said to be from Caracas. These two are quite identical in coloration, and measure as follows: Wing 3-3.20, tail 1.80, culmen .48-.50. They may readily be distinguished from females of *P. passerina* by the much lighter and more yellowish green coloration of the rump and upper tail-coverts, distinctly yellow frontlet, less yellowish cheeks, and smaller size.

Another specimen, said to have come from Sta. Marta (possibly not in Colombia, however), belonging to the American Museum of Natural History (Lawrence collection), is also without much doubt this species, since it agrees with the two females mentioned above in all characters which distinguish them from the female of the Colombian *P. exquisita*, viz, decidedly less yellowish tone of the coloration both above and below, much less extent of the yellow on the forehead, and darker and more uniform green of the greater wing-coverts. Compared with the Guiana specimen it has the yellow frontal band (about .10 of an inch wide at base of culmen, but extending laterally quite to the eyes) of a purer yellow, and rather abruptly defined against the green; the greater



wing-coverts, primary-coverts, etc., have rather more of a bluish cast, as have also the under wing-coverts, but the plumage has been recently molted, which may account for this slight difference. The measurements are as follows: Length (skin) 4.60; wing 3.25, tail 1.70, culmen .50, width of upper mandible at base .30, tarsus .45, outer toe .48.

The alleged locality of this specimen may be said to be against referring this specimen to *P. guianensis* rather than to *P. exquisita*, Sta. Marta being located on the maps which I have been able to examine on the opposite side of the Magdalena delta from Cartagena. On one map, however, it is located farther eastward along the coast with a spur of the Sierra Nevada de Sta. Marta intervening. Should this be the true location of Sta. Marta, the matter is thus easily explained. Or, on the other hand, there may be a Sta. Marta in Venezuela or Guiana, or the alleged locality may be erroneous, or the specimen instead of coming from the immediate vicinity of Sta. Marta may have been obtained somewhere in the highlands to the eastward.

#### 11. *Psittacula deliciosa*, sp. nov.

(Santarem Passerine Parrot.)

*Psittacus gregarius* SPRIX, Russ, FremL. Stubenvog., iii, 1879, 390 (*nec* SPRIX).

SP. CHAR.—Similar to *P. guianensis* (Sw.), but male with axillar) and under wing-coverts (except primary coverts and along edge of wings entirely intense hyacinth-blue, and the lower back (or upper rump) tinged with Nile-blue.

*Adult male* (No. 112453, Diamantina Creek, Lower Amazon, June 23, 1887; C. B. Riker): Top and sides of head bright yellowish Paris-green, the lower parts a paler and more yellowish tint of the same; the color richest on forehead, lores, and orbits; occiput and hind-neck pale grayish green; back, scapulars, wing-coverts, and tertials deeper, more brownish, green (almost an apple-green tint); lower back and rump rich emerald-green, tinged anteriorly with Nile-blue; upper tail-coverts and tail bright yellowish Paris-green, the feathers more yellowish beneath the surface; three innermost feathers of bastard wing deep blue, with concealed portions mainly light greenish blue or bluish green; outer feather green; three outermost primary coverts greenish, the second and third tipped with blue; the rest rich dark hyacinth-blue; greater coverts delicate Nile-blue; innermost secondaries medium blue, edged with light yellowish green terminally, passing into Nile-blue basally; primaries light grass-green, narrowly edged with paler green, their shafts black, and inner webs dull bluish green; under surface of remiges glaucous-green, the secondaries and innermost primaries narrowly edged with yellowish; under primary-coverts deeper bluish green, without yellowish edges; rest of under wing-coverts, with axillars, uniform intense hyacinth-blue; edge of wing Nile-blue, more greenish posteriorly. Bill wholly brownish white; legs and feet pale brownish (in dried skin).

Length (skin) 5; wing 3.25, tail 1.80 culmen .47, gonys .30, width of upper mandible at base .32, tarsus .47; inner toe .50

Two additional adult males are exactly like the type, as described above, in coloration, and measure as follows: Length (skins) 4.70–4.85, wing 3.15–3.30, tail 1.70–1.75, culmen (of one specimen, the upper mandible of the other being mutilated) .45, depth of bill at base .48, width .28, tarsus .45.

An adult male from Santarem in the collection of the Museum of Comparative Zoology, Cambridge, Mass., agrees minutely in coloration with the *Diamantina* specimens. It measures as follows: Wing 3, tail 1.60, culmen .45, width of upper mandible at base .32, tarsus .45, outer toe .45.

Two other adult females likewise agree with the one described above, the forehead of one, however (perhaps a younger bird), being less extensively yellow. They measure as follows: Length (skins) about 4.50–5; wing 3.10–3.15, tail 1.65–1.70, culmen .45–.47.

#### UNDETERMINED NAMES.

I am unable to identify the following with any species of this genus known to me:

##### 1. *Psittacus capensis* MÜLL.

*Psittacus capensis* MÜLL., S. N. Suppl., 1767, 80 (based on *Petit Perruche, du Cap de Bon-Espérance*, BUFF. Pl. Enl. 455, fig. 1.

*Psittacus cyanopterus* BODD., Tabl. P. E., 1783, 27 (same basis).

This bird has very generally been identified with the Guiana species (*P. guianensis* SWAINS.), but without the slightest reason, that I can see. The figure in Pl. Enl. itself is wholly undeterminable, with our present knowledge, and if really taken from an American specimen may just as well be *P. passerina* without blue on the rump as any other; in fact, the figure agrees much better with the latter than with any plumage of *P. guianensis*.

##### 2. *Psittacus leucophthalmus* SCOPOLI.

*Psittacus leucophthalmus* SCOP., Delic. Flor. et Faun., 1786, 87 (based on *Petite Perruche de l'île de Luçon, Seconde espece*, SONNINI, Voy. à la Nouv. Guinée, 1766, 76, pl. 38, upper fig.).

*Psittacus simplex* KÜHL, Consp. Psitt., 1820, 66 (same basis).

Although this has usually been referred to *P. passerinus*, I can see no reason whatever for considering it as an American bird at all. It is said to have come from Luçon, one of the Philippine Islands.

##### 3. *Psittacus st. thomæ* KÜHL.

*Psittacus st. thomæ* KÜHL, Consp. Psitt., 1820, 58 (island of St. Thomas).

"Uniform clear green, beneath more yellowish; region round base of bill in the male yellow, in the female greenish yellow; tail underneath pale yellowish green, towards the tip more of a brownish yellow; the

inner webs of the wings black, those of the secondaries yellowish; bill pale; female with the forehead yellowish green,  $4\frac{1}{2}$  inches long.

"In Museum Lengerianum and in Paris bird stores." (Translation.)

The above description does not apply to any species of *Psittacula* known to me. The St. Thomas given as the habitat may be some island of the eastern hemisphere and not the Antillean island of the same name.

#### 4. *Psittacula gregaria* (SPIX).

*Psittaculus gregarius* SPIX, Av. Bras., i, 1838, 39, pl. 34, figs. 3, 4 (Minas Geraes, Brazil).

"Herb-green; wings green, without blue or yellow spots; bill sub-bidentate; tail slightly longer than [*i. e.*, reaching beyond] wings; head of the female yellowish.

"Description: Body hardly larger than that of the preceding [*P. xanthopterygius* and *P. passerinus*]; above and below herb-green, the wings above and below, anteriorly, herb-green, below posteriorly malachitaceous-blackish; the remiges greenish on the outer web, blackish on the inner; rump bright green; crissum yellowish; tail reaching slightly beyond wings, very bright green, with rectrices very broad, triangular at tip; bill yellowish, sub-bidentate; feet dirty whitish.

"Inhabits, in flocks, the campos of Minas Geraes, the female (perhaps *Psittacus tirica* LATH.) with the head yellowish. Two specimens." (Translation.)

Although Spix expressly says there is no blue on the wing of this bird, the figures, of both male and female, show distinct blue edgings to the primaries, the rest of the outer web being white; the female is represented as having only the sides of the head (lores, orbits, and malar region) yellow, the entire pileum being deep green, like the back, etc. At least the figures in the copy of the work in the National Museum library are so colored.

It is impossible to say with certainty what this bird is. I have seen no specimen from the region in question, which may possibly be inhabited by a species distinct from the coast bird (*P. passerina vivida*). It may be a *Brotoperys* instead of a *Psittacula*.

#### 5. *Psittacula modesta* CAB.

*Psittacula modesta* CAB. in Schomb. Guiana, iii, 1848, 727 (Brit. Guiana).

"*Species nova*.—A single specimen marked as a male, without any blue, is distinguished from the female of *P. passerinus* by being of a somewhat larger size and particularly by its broader bill. Forehead and anterior part of the crown, as well as the whole under side, yellowish green; the green of the upper side is less vivid and darker (similar to that of *P. tuipara*); remiges black. Rump, under wing-coverts, and outer margins of the primaries grass-green; the inner margin of the remiges tinged with dull bluish green. Upper mandible dark brown, lower mandible light. Total length 5 inches 8 lines; wing  $3\frac{1}{4}$  inches; tail 1 inch 8 lines; middle toe, without claw,  $6\frac{3}{4}$  lines." (Translation.)

What this bird is I am unable to say. Possibly it is the female of *P. sclateri* GRAY, or it may be a distinct species.

6. *Psittacula passerina* CAB., *nee* LINN.

*Psittacula passerina* CAB., in Schomb. Guiana, iii, 1848, 726 (*nee Psittacus passerinus* LINN.).

? *Psittacula gregaria* CAB., t. c., p. 727.

No description is given under either of these names which will enable us to identify the species referred to. That the former is a blue-rumped bird, however, is evident from the following observations of Schomburgk, under *P. gregarius*.

"Does not differ in its habits from the foregoing [*P. passerina*,<sup>1</sup> i. e., blue-rumped specimens] and occurs like that more commonly on the coast than in the interior. It also occurs to me that this species is by no means valid, and that it is only a young bird or the female of the foregoing, because, whenever I killed more of them at one shot there were always among them some with blue on the back, while others did not possess it. That two different species should unite into one flock would be a peculiarity only to be found in this case."

What this bird can be is, of course, purely conjectural; no identified blue-rumped species is known to occur in Guiana, but possibly the new *P. exquisita* of Colombia may, in certain districts, extend that far east. The green-rumped bird ("*P. gregarius*") if not the female of the blue-rumped bird, as suggested by Schomburgk (which it probably is), might be *P. guianensis* (SWAINS.).

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